

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

- 1 1. (Currently amended) A method for redirecting external memory
2 allocation operations, generated during calls by an application to external library
3 functions, to an internal memory manager within the application, comprising:
4 encountering a call to an external library function that performs a memory
5 allocation operation during execution of the application;
6 determining if the external library function can call to an internal memory
7 allocation function within the application that allocates memory from a pool that
8 is managed by the application, wherein determining if the external library function
9 can call an internal memory allocation function involves reading a pre-determined
10 indicator value, which indicates whether the external library function can call the
11 internal memory allocation function, and wherein the method further comprises
12 pre-determining a value for the pre-determined indicator value by examining the
13 external library function to determine whether the external library function or a
14 function called by the external library function will call a memory allocation
15 function, and whether there are external references to external memory blocks
16 allocated by the external library function; and
17 if so,
18 redirecting the call to the internal memory allocation
19 function, and

20 allocating the memory using the internal memory allocation
21 function so that memory can be allocated from the pool that is
22 managed by the application.

1 2-3 (Canceled).

1 4. (Original) The method of claim 1, wherein the application is a platform-
2 independent virtual machine.

1 5. (Original) The method of claim 1, wherein the application runs in
2 single-threaded mode on a computing device.

1 6. (Original) The method of claim 1, wherein the application runs on a
2 memory-constrained computing device.

1 7. (Original) The method of claim 1, wherein redirecting the call to the
2 internal memory allocation function involves executing an interpose function that
3 calls the internal memory allocation function.

1 8. (Previously presented) The method of claim 1, further comprising
2 garbage collecting memory allocated by the internal memory allocation function.

1 9. (Original) The method of claim 1, wherein the internal memory
2 allocation function allocates memory in a heap.

1 10. (Currently amended) A computer-readable storage medium storing
2 instructions that when executed by a computer cause the computer to perform a
3 method for redirecting external memory allocation operations, generated during

4 calls by an application to external library functions, to an internal memory
5 manager within the application, the method comprising:
6 encountering a call to an external library function that performs a memory
7 allocation operation during execution of the application;
8 determining if the external library function can call to an internal memory
9 allocation function within the application that allocates memory from a pool that
10 is managed by the application, wherein determining if the external library function
11 can call an internal memory allocation function involves reading a pre-determined
12 indicator value, which indicates whether the external library function can call the
13 internal memory allocation function, and wherein the method further comprises
14 pre-determining a value for the pre-determined indicator value by examining the
15 external library function to determine whether the external library function or a
16 function called by the external library function will call a memory allocation
17 function, and whether there are external references to external memory blocks
18 allocated by the external library function; and
19 if so,
20 redirecting the call to the internal memory allocation
21 function, and
22 allocating the memory using the internal memory allocation
23 function so that memory can be allocated from the pool that is
24 managed by the application.

1 11-12 (Canceled).

1 13. (Original) The computer-readable storage medium of claim 10,
2 wherein the application is a platform-independent virtual machine.

1 14. (Original) The computer-readable storage medium of claim 10,
2 wherein the application runs in single-threaded mode on a computing device.

1 15. (Original) The computer-readable storage medium of claim 10,
2 wherein the application runs on a memory-constrained computing device.

1 16. (Original) The computer-readable storage medium of claim 10,
2 wherein redirecting the call to the internal memory allocation function involves
3 executing an interpose function that calls the internal memory allocation
4 functions.

1 17. (Previously presented) The computer-readable storage medium of
2 claim 10, wherein the method further comprises garbage collecting memory
3 allocated by the internal memory allocation function.

1 18. (Original) The computer-readable storage medium of claim 10,
2 wherein the internal memory allocation function allocates memory in a heap.

1 19. (Currently amended) An apparatus for redirecting external memory
2 allocation operations, generated during calls by an application to external library
3 functions, to an internal memory manager within the application, comprising:
4 an execution mechanism configured to execute a call to an external library
5 function that performs a memory allocation operation during execution of the
6 application;
7 a determination mechanism configured to determine if the external library
8 function can call to an internal memory allocation function within the application
9 that allocates memory from a pool that is managed by the application, wherein
10 determining if the external library function can call an internal memory allocation

11 function involves reading a pre-determined indicator value, which indicates
12 whether the external library function can call the internal memory allocation
13 function;
14 a precomputation mechanism configured to precompute the pre-
15 determined indicator value by examining the external library function to
16 determine whether the external library function or a function called by the external
17 library function will call a memory allocation function, and whether there are
18 external references to external memory blocks allocated by the external library
19 function;
20 a redirection mechanism configured to redirect the call to the internal
21 memory allocation function; and
22 an internal memory allocation function configured to allocate memory so
23 that memory can be allocated from the pool that is managed by the application.

1 20-21 (Canceled).

1 22. (Original) The apparatus of claim 19, wherein the application is a
2 platform-independent virtual machine.

1 23. (Original) The apparatus of claim 19, wherein the application runs in
2 single-threaded mode on a computing device.

1 24. (Original) The apparatus of claim 19, wherein the application runs on a
2 memory-constrained computing device.

1 25. (Original) The apparatus of claim 19, wherein the redirection
2 mechanism is further configured to execute an interpose function that calls the
3 internal memory allocation functions.

1 26. (Previously presented) The apparatus of claim 19, further comprising a
2 garbage collection mechanism configured to garbage collect memory allocated by
3 the internal memory allocation function.

1 27. (Original) The apparatus of claim 19, wherein the internal memory
2 allocation function allocates memory in a heap.